

EnviroBate

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To:	Ensign Robert S. Aranha	From:	Mark Sampson, Operations Manager
Fax:	202-433-2092 or 202-685-8237	Pages:	Three (3), including cover
Phone:	202-685-0087	Date:	Friday, June 14, 2002 @ 2:54 PM
Re:	Washington Navy Yard - Bldg. 176	CC:	ACS Environmental @ /5/-485-9572

☐ Urgent
 ☐ For Review
 ☐ Please Comment
 ☒ Please Reply
 ☐ Confidential

Dear Ensign Aranha:

Thank you for the opportunity to assist in your microbial remediation project within the westerly first floor space of Building 176. Please accept this correspondence as a final report of our observations, conclusions, remedial actions and recommendations.

Observations

- Relatively little fungal contamination was visible within the designated work area. Some growth was evident on the sheetrock of the exterior wall below a line approximately 18" from the floor slab. This growth terminated near the south end of the work area, at the point the space between the slab and computer floor widens substantially.
- Minimal sheetrock debris with visible fungal contamination was discovered beneath the computer floor. No critical barrier was in place to isolate this space from the work area.
- A well constructed and reinforced single layer 6 mil. polyethylene barrier was in place to segregate the work area from the adjacent office space.
- One 2000 CFM air filtration device ('AFD') was present with an attached 'flex' exhaust duct run from the work area through the temporary exterior entrance. The AFD was not running and was not 'faced off.' The AFD was shut down by others than ACS Environmental personnel in response to complaints from occupants of the adjacent space regarding noise generated by the device.
- A heavy 'musty' odor was evident near (and plainly emanating from) the floor drain of the fire room. Stagnant standing water was visible upon inspection of the floor drain.
- Reports from Advanced Environmental Services, Inc. ('AES Report') and Aerobiology Laboratory Associates, Inc. (2) ('ALA Reports') of laboratory analyses of air and swab samples taken from within the work area and one of the air handling units serving the floor were reviewed for 'historical' purposes.
- The air handling unit (as well as the two variable air volume boxes and associated ductwork) serving the work area were in very clean condition and were devoid of porous materials which would harbor moisture and/or support fungal development. VAV box filters need to be changed in the near future.

Conclusions

- The odors emanating from the fire room floor drain alone were likely sufficient to prompt indoor air quality complaints from occupants of the vicinity. Viewed in conjunction with the high counts of *chaetomium* detected in the vicinity (see AES Report, Lab Number 18), it is highly probable that the floor drain condition was a major and legitimate contributing factor to recent concerns of fungal contamination in the area.

**Environmental & Demolition Contractor
Certified SBA 8(a) Contractor**

If you did not receive all page(s) indicated above, please call me at (703) 742-3600 as soon as possible. Thanks!

June 11, 2002

Conclusions (continued)

- As all carpet had been removed from the work area, and no significant fungal growth was visible upon the remaining sheetrock and other surfaces within the work area, it is highly probable that the fungal contamination detected in various samples referenced by the AES Report was the result of contaminants entrapped in the AFD during initial remediation actions being dispersed when the AFD was shut down and not 'faced off.'

Remedial ActionsSaturday, June 1, 2002:

- Two work stations within the work area were dismantled, removed and discarded with temporary supplemental critical barriers in place. Contents of the work stations were bagged and delivered to the government site representative.
- The penetrations in the existing containment created by the removal of the work stations were permanently closed.
- An additional 6 mil. polyethylene barrier was installed to 'double' the existing containment.
- The single supply air diffuser in the work area was sealed.
- A critical barrier of 6 mil. polyethylene was installed to seal the gap between the computer floor and slab.
- Two (2) 2000 CFM HEPA-filtered AFDs were installed and exhausted to the facility's exterior.
- An AFD, HEPA vacuum, GFCI and electrical cord belonging to ACS Environmental were removed from the containment and are stored in the EnviroBate Global, Inc. Washington, DC warehouse. (Existing flex exhaust duct was removed and discarded.)
- Sheetrock and insulation was removed from the work area's exterior wall, north partition wall, and exterior side of the fire room walls from floor slab level to a height approximately 4" below the ceiling perimeter track. Sheetrock and insulation at the southerly approximately 6' of the work area was not disturbed as visible evidence of fungal development terminated at least 2' to the north of this section of the work area. Sheetrock remaining on the interior side of the fire room walls (above approximately 42" height) was left in place, as well.
- All debris was bagged and sealed in clear polyethylene bags, removed from the work area via the temporary exterior door, and placed in a waste dumpster situated on the opposite side of the adjacent street.
- At the end of the work day, both AFDs were left running and exhausting to the facility's exterior. Negative air pressure was sustained well in excess of -.02 WC and allowed for at least eight (8) air changes per hour. One AFD was certainly sufficient for this project -- the second unit was introduced for purposes of redundancy and to increase the number of air changes achieved during 'bulk' remediation efforts.

Sunday, June 2, 2002:

- Material Safety Data Sheets for cleaning and/or disinfecting agents were provided to Ensign Aranha.
- Saturday's efforts, our observations and recommendations were reviewed with Ensign Aranha.
- It was agreed with Ensign Aranha that he would arrange for a plumber to address the fire room floor drain issue(s) during the following business week, and that final cleaning of the work area would be deferred to a date subsequent to the plumber's visit.
- All surfaces within the work area were air-washed with compressed air (with particular attention given to 'difficult access' areas such as window blinds and spaces between stud plates and floor slab); HEPA vacuumed; and hand-scrubbed/wet-wiped with a 1:10 water-Simple Green solution.
- Minimal moisture was introduced to limit excessive humidity within the work area, and to avoid 'embedding' contaminated dirt, dust and debris in irregular surfaces. Cleaning techniques were consistent with 'source removal' principles and methodology.
- The cleaning protocol described in the foregoing paragraph was repeated.
- Moisture and humidity metering was not conducted due to the lack of evidence of moisture infiltration and/or excessive humidity in the work area.
- At the end of the work day, the outdoor exhaust of one of the AFDs was terminated.

June 14, 2002

Remedial Actions (continued)Monday, June 3, 2002:

- Plumber under direction of Ensign Aranha clears fire room floor drain.

Wednesday, June 5, 2002:

- Scheduled final cleaning postponed due to escort unavailability. Further delay will only increase the benefits of air scrubbing provided by the non-exhausted HEPA filtered AFD.

Friday, June 7, 2002:

- The cleaning protocol utilized on June 2, 2002 was repeated, except that wet-wiping was performed on this occasion with Zep Antibacterial Disinfectant and Cleaner with Lemon. The floor drain was treated with this cleaning/disinfecting agent, as well.
- No biocides were applied. In the opinion of EnviroBate Global, Inc., contaminants had been removed from the work area, and any potential benefit from the use of biocides would be far outweighed by indoor air quality concerns related to their introduction to the environment.
- Clearance sampling was determined to be unnecessary in light of conditions encountered and the efficacy of source removal remediation efforts.
- AFDs were 'faced off' and removed from the job site.
- The critical barriers were left in place to aid in controlling dust produced in renovation activities.

Recommendations

- Restoration may proceed.
- Sheetrock should be hung with a 1/2" gap between the floor slab and the material's bottom edge to minimize the potential for 'wicking' of moisture from the slab into the sheetrock.
- Non-latex adhesive should be utilized in the installation of base trim.
- The fire room floor drain should be monitored regularly and maintained to ensure that future bacterial or fungal development does not occur.
- HVAC system filters should be inspected regularly and changed as needed to maintain the excellent condition of the system.
- Future projects can be designed to minimize AFD noise concerns (e.g. - place AFDs away from occupied spaces and achieve negative air pressure and air change goals by flex ducting intake to work area).
- As discussed on June 11, 2002, a 'closure' meeting with EnviroBate Global, Inc. personnel present to address facility occupants' indoor air quality concerns related to this project may be advisable.

Please do not hesitate to contact the undersigned if you have additional concerns, or I have failed to address significant issues in this report.

Thank you once again for your courtesy and consideration. It has been a pleasure working with you.

Sincerely,



Mark Sampson
Operations Manager

Indoor Air Quality Association



2002 MEMBERSHIP CERTIFICATE

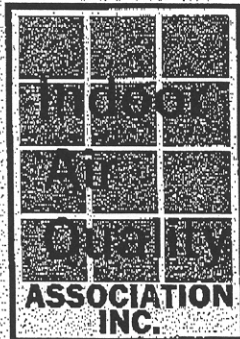
THIS DOCUMENT IS TO CERTIFY THAT

Mark Sampson
& EnviroBate Global Inc.

ARE MEMBERS IN GOOD STANDING AND ENTITLED TO ALL RIGHTS &
PRIVILEGES OF ASSOCIATION MEMBERSHIP

A handwritten signature in dark ink, appearing to read "G. Fellman", is written over a horizontal line.

Glenn E. Fellman, Executive Director



Certified Mold Remediator

The Indoor Air Quality Association has awarded the credential **Certified Mold Remediator (CMR)** to the individual named below. In order to obtain CMR status, an individual must achieve a passing score of 70 percent or greater on a rigorous, 3-hour examination. CMR status is only awarded to individuals who meet experience requirements that assure field knowledge of mold remediation and related indoor environmental issues.

Mark Sampson

CMR 01008

Certification Number

February 28, 2004

Expiration Date

Signed on behalf of the Indoor Air Quality Association

A handwritten signature in cursive script, appearing to read "Glenn Fellman", is written over a horizontal line.

Glenn Fellman, Executive Director



NATIONAL AIR DUCT CLEANERS ASSOCIATION

Certifies

Mark Sampson

as a NADCA Air System Cleaning Specialist (ASCS) who demonstrated a comprehensive knowledge and thorough understanding of heating, ventilating, and air conditioning (HVAC) system cleaning by passing the NADCA Certification Examination. This certificate is valid until the expiration date shown below and is renewable.

July 1, 2002

Expiration Date

05001145

Certification Number

NADCA

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Code of Ethics

National Air Duct Cleaners Association

This document certifies that

EnviroBate

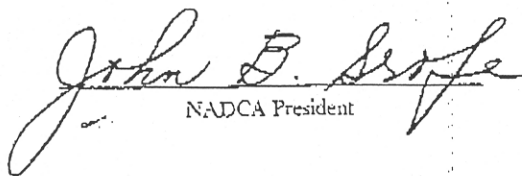
Is a Certified Regular Member in good standing for the year

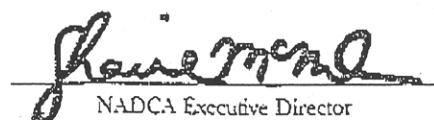
July 1, 2001 - June 30, 2002

Member Since March 2001

And has agreed to conduct its air duct cleaning business in accordance with the following mandatory Code of Ethics:

- 1.) We will serve our customers with integrity and competence.
- 2.) We will perform our work using Source Removal methods.
- 3.) We will be honest and forthright in our advertising.
- 4.) We will provide our clients with accurate inspections and evaluations of the cleanliness and physical condition of their HVAC systems, using this information to determine the type of cleaning and maintenance services required, if any.
- 5.) We will provide only necessary and desired services to our clients, and will not use furnace/air duct cleaning as a means of selling unnecessary or unwanted products or services.
- 6.) We will provide services only after completing the necessary bonding and licensing procedures.
- 7.) We will utilize the services and products of those who possess specialized skills, tools, or trades not possessed by us when circumstances call for work to be done which we are unable to perform.
- 8.) We will stay abreast of new developments in technology, tools of the trade, building codes, the Uniform Mechanical Code, and any other codes or information that directly affects our work.
- 9.) We will require that all employees of our firm practice furnace/air duct cleaning in accordance with NADCA Guidelines and the Code of Ethics.
- 10.) We will perform our services in accordance with the current published standards of the association.


NADCA President


NADCA Executive Director

NADCA • 1518 K Street, NW, Suite 508 • Washington, DC 20005

